

CM WHAT IS CLAIMED IS:

1. A process for reducing the amount of or preventing formation of nitrosamines in a harvested tobacco plant, comprising

5       subjecting at least a portion of the plant, while said portion is uncured and in a state susceptible to having the amount of nitrosamines reduced or formation of nitrosamines arrested, to a controlled environment capable of providing a reduction in the amount of nitrosamines or prevention of the formation of nitrosamines, for a time sufficient to reduce the amount of or substantially prevent the formation of at least one nitrosamine, wherein  
10       said controlled environment is provided by controlling at least one of humidity, rate of temperature change, temperature, airflow, CO level, CO<sub>2</sub> level, O<sub>2</sub> level, and arrangement of said tobacco plant.

15       ~~2.~~<sup>5</sup> The process according to claim ~~1~~<sup>4</sup>, wherein the airflow is at least about 70 CFM at 1" static pressure per cubic feet of volume.

20       ~~3.~~<sup>6</sup> The process according to claim ~~2~~<sup>5</sup>, wherein the airflow is at least about 80 CFM at 1" static pressure per cubic feet of volume.

25       4. The process according to claim 1, wherein the flow of air is sufficient to prevent an anaerobic condition around the vicinity of the tobacco leaf.

30       ~~5.~~<sup>7</sup> The process according to claim ~~2~~<sup>5</sup>, wherein the air is dehumidified to less than about 85%.

<sup>8</sup>  
~~6~~. The process according to claim ~~5~~<sup>7</sup>, wherein the air is dehumidified to less than about 60%.

<sup>9</sup>  
~~7~~. The process according to claim ~~6~~<sup>8</sup>, wherein the air is dehumidified to less than  
5 about 50%.

<sup>10</sup>  
~~8~~. The process according to claim ~~7~~<sup>9</sup>, wherein the air is heated to about 100°F to about 250°F.

<sup>11</sup>  
~~9~~. The process according to claim ~~8~~<sup>10</sup>, wherein the air is heated to about 160°F to about 170°F.

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10. The process according to claim 1, wherein the air is substantially free from combustion exhaust gases.

<sup>12</sup>  
~~11~~. The process according to claim ~~1~~<sup>4</sup><sub>53</sub>, wherein the treatment time is from about 48  
15 hours up to about 2 weeks.

<sup>13</sup>  
~~12~~. The process according to claim ~~1~~<sup>4</sup><sub>53</sub>, further comprising exposing the tobacco  
20 product to UV light.

<sup>14</sup>  
~~13~~. The process according to claim ~~1~~<sup>4</sup><sub>53</sub>, further comprising subjecting the tobacco  
product to microwave energy.

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14. A tobacco product obtained from the process according to any one of claims 1 through 13.

15. A tobacco product comprising non-green or yellow tobacco suitable for human consumption and having a content of at least one tobacco-specific nitrosamine selected from N'-nitrosornicotine (NNN), 4-(N-nitrosomethylamino)-1-(3-pyridyl)-1-butanone (NNK), N'-nitrosoanatabine (NAT) and N'-nitrosoanabasine (NAB) which is less than about 50% by weight of the content of said at least one tobacco-specific nitrosamine in conventionally cured tobacco.

16. The tobacco product according to claim 15, wherein said tobacco product has a normal nicotine content.

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17. The tobacco product according to claim 15, wherein said tobacco product has not been subjected to organic solvent extraction.

18. A tobacco product according to claim 15, wherein said at least one tobacco-specific nitrosamine content is less than about 75% by weight of the content of said at least one tobacco-specific nitrosamine content in conventionally cured tobacco.

19. A tobacco product according to claim 18, wherein said at least one tobacco-specific nitrosamine content is less than about 95% by weight of the content of said at least one tobacco-specific nitrosamine content in conventionally cured tobacco.

20. A tobacco product comprising non-green or yellow tobacco having a NNN content less than about 0.05  $\mu\text{g/g}$ .

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5 21. A tobacco product comprising non-green or yellow tobacco having a combined NAT and NAB content of less than about 0.10  $\mu\text{g/g}$ .

22. A tobacco product comprising non-green or yellow tobacco having a NNK content of less than about 0.05  $\mu\text{g/g}$ .

10 23. A tobacco product comprising non-green or yellow tobacco having a total TSNA content of less than about 0.16  $\mu\text{g/g}$ .

15 24. A tobacco product comprising cured non-green or yellow tobacco having a NNN level of less than about 0.05  $\mu\text{g/g}$ , a combined NAT and NAB level of less than about 0.10  $\mu\text{g/g}$ , and a NNK level less than about 0.05  $\mu\text{g/g}$ .

25. A tobacco product according to claim 14 in the form of a cigarette, a cigar, chewing tobacco, snuff, tobacco-containing gum or lozenge.

20 26. An apparatus for curing tobacco products comprising:  
an enclosed or substantially enclosed container comprising a base frame, optionally at least one wall, optionally a roof, and optionally a door;  
an air handling device capable of providing an air flow of at least about 70 CFM at

1" static pressure per cubic feet of apparatus volume, wherein said air flow is at least partially and at least temporarily in communication with the interior of said container; and a heat exchanger capable of providing at least about 1,100 BTU/hour per cubic feet of apparatus volume.

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27. The apparatus according to claim 26, wherein the heat exchanger comprises a heating system that is external to said container.

28. The apparatus according to claim 27, wherein the flow of combustion exhaust gases from said heating system is arranged so as to minimize the flow of said combustion exhaust gases through said container.

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